UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/845,933	04/30/2001	Bruce Leroy Beukema	ROC920010009US1	3353

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WOOD, HERRON & EVANS, L.L.P. (IBM)
2700 CAREW TOWER
441 VINE STREET
CINCINNATI, OH 45202

EXAMINER
SWEARINGEN, JEFFREY R

ART UNIT	PAPER NUMBER
2145	

DATE MAILED: 05/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
	09/845,933	BEUKEMA ET AL.
Office Action Summary	Examiner	Art Unit	
	Jeffrey R. Swearingen	2145	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on <u>21 December 2004</u>.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>30 April 2001</u> is/are: a)☐ accepted or b)☒ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Response to Arguments

1.   Applicant's arguments with respect to claims 1-22 have been considered but are moot in view of the new ground(s) of rejection.

Drawings

2.   The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: Figure 6, item 96. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

3.   The disclosure is objected to because of the following informalities: Page 13, line 23 refers to a bock, which is a typographical error but the Examiner is not sure what Applicant intended to say.

Appropriate correction is required.

Claim Rejections - 35 USC § 101

4.   35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

5.   Claim 19 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claim 19 is not limited to tangible embodiments. In view of Applicant's disclosure, specification page 11, lines 3-10, the medium is not limited to tangible embodiments, instead being defined as including both tangible embodiments (e.g., recordable type media such as volatile and nonvolatile memory devices, floppy and other removable disks, hard disk drives, optical disks (e.g., CD-ROM'S, DVD's, etc.)) and intangible embodiments (e.g., transmission type media such as digital and analog communication links, data files). As such, the claim is not limited to statutory subject matter and is therefore non-statutory.

To overcome this type of 101 rejection the claims need to be amended to include only the **physical computer media and not a transmission media or other intangible or non-functional^ media**. Carrier media and transmission media would be not statutory but storage media would be statutory.

Claim Rejections - 35 USC § 103

6.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7.   Claims 1, 10, 20 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iterum et al. (U.S. Patent No. 6,535,990) in view of Stevens (TCP/IP Illustrated, Volume 1: The Protocols).

8.   In regard to claim 1, Iterum discloses a clustered computing system with interconnected nodes that communicate with each other. See Iterum, column 2, lines 31-50, column 3, lines 61-62, column 4, lines 4-12, column 5, lines 2-20, lines 45-56, column 6, lines 45-67, figure 1, figure 3a. Iterum fails to disclose communicating port identifiers and initiating a write operation to transfer data to a specific port.

However, Stevens discloses the basics of TCP/IP, which would be used in Iterum as illustrated in Iterum, column 1, lines 50-58, column 2, lines 46-54. Stevens discloses the use of port numbers (Stevens, 12-13). It would be obvious to one of ordinary skill in the art to transmit the port number to another node in order for the node to know where it was sending the data. It would be further obvious to one of ordinary skill in the art that sending the port number would be key to the operation of TCP/IP and would be necessary for communication in a clustered computer system. See Stevens, 419-439 for examples of sending the port number to facilitate data transfer using the FTP protocol. It would be obvious to one of ordinary skill in the art that sending a file as shown in Stevens, 419-439 to another node would require communicating the file from port to port.

9.   In regard to claim 10, the limitations of this claim are substantially the same as the limitations of claim 1. Therefore the rejection against claim 1 is applied to claim 10.

10.   In regard to claims 18-19, the limitations of these claims are substantially the same as the limitations of claim 10. Therefore the rejection against claim 10 is applied to claims 18-19.

11.   In regard to claim 20, the limitations of this claim are substantially the same as the limitations of claim 1. Therefore the rejection against claim 1 is applied to claim 20.

12.   In regard to claim 22, the limitations of this claim are substantially the same as the limitations of claim 1. Therefore the rejection against claim 1 is applied to claim 22.

13.   Claims 2-9, 11-17 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iterum in view of Stevens as applied to claim 1, and further in view of Mano (Computer System Architecture).

14.   In regard to claim 2, Iterum in view of Stevens is applied as in claim 1. Iterum in view of Stevens fails to disclose detecting storage of data in a register. However, Mano discloses a diagram of a basic asynchronous communication interface in a computer. This interface checks to see if a register has data or not. See Mano, 398-402. Mano is a basic computer architecture textbook, and would be naturally incorporated into the teaching of Iterum. It would be obvious to one of ordinary skill in the art to check for

the presence of data before sending data to another port to eliminate network and processor error and save bandwidth.

15.   In regard to claim 3, Iterum in view of Stevens in further view of Mano is applied as in claim 2. Mano further discloses using interrupts to inform the computer when data is present. See Mano, 406. It would be obvious to one of ordinary skill in the art to use an interrupt to check for the presence of data instead of a flag to save processor cycles.

16.   In regard to claim 4, Iterum in view of Stevens in further view of Mano is applied as in claim 3. Mano further discloses that when an interrupt is detected, the data must be processed and the interrupt then cleared. See Mano, 414-415.

17.   In regard to claim 5, Iterum in view of Stevens in further view of Mano is applied as in claim 4. Mano further discloses a priority interrupt hardware, which detects a non-zero value in communication registers. See Mano, 411, figure 11-14. Mano further discloses clearing the registers and clearing the interrupt. Mano, 414.

18.   In regard to claim 6, Iterum in view of Stevens is applied as in claim 1. Iterum fails to disclose queuing data for transmission. However, Mano discloses a FIFO buffer that would queue the data before transmission. Processing the commands is transmitting the data. See Mano, page 400-402. Mano is a computer architecture textbook, and the teachings within it would be an important part of the Iterum invention. It would be obvious to one of ordinary skill in the art to queue commands for transmission as taught in Mano to prevent data congestion and/or loss.

19.   In regard to claims 7-8, Iterum in view of Stevens is applied as in claim 1. Iterum fails to disclose a read operation. However, Mano discloses a read operation on 398. Mano is a computer architecture textbook, and the teachings within it would be an important part of the Iterum invention. It would be obvious to one of ordinary skill in the art to use a read operation with data communications in order to facilitate data transfer on command.

20.   In regard to claim 9, Iterum in view of Stevens is applied as in claim 1. Iterum fails to disclose a register address space for storing data. However, Mano teaches the basics of memory addressing in

450-453 and 464-469. It would be obvious to one of ordinary skill in the art to assign an address space to a register to allow memory to be stored in the proper location and accessed quickly and orderly.

21.   In regard to claim 11, the limitations of this claim are substantially the same as the limitations of claim 5. Therefore the rejection against claim 5 is applied to claim 11.

22.   In regard to claims 12-13, Iterum in view of Stevens in further view of Mano is applied as in claim 11. The additional limitations of claims 12-13 are substantially the same as the limitations of claim 3, which involve using interrupts with a computer for many purposes. Therefore the rejection against claim 3 is applied to claims 12-13.

23.   In regard to claim 14, Iterum in view of Stevens is applied as in claim 10. The additional limitations of claim 14 are substantially the same as the limitations of claim 5, since a logical-OR operation performs the same functionality as detecting a non-zero value in a register. Therefore the rejection against claim 5 is applied to claim 14.

24.   In regard to claims 15-16, the limitations of these claims are substantially the same as the limitations of claims 7-8. Therefore the rejection against claims 7-8 is applied to claims 15-16.

25.   In regard to claim 17, Iterum in view of Stevens in further view of Mano is applied as in claim 16. The additional limitations of claim 17 are embodied within claim 9. Therefore the rejection against claim 9 is applied against claim 17 in view of the previous rejection against claim 16.

26.   In regard to claim 21, the limitations of this claim are substantially the same as the limitations of claim 5. Therefore the rejection against claim 5 is applied to claim 21.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey R. Swearingen whose telephone number is (571) 272-3921. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Valencia Martin-Wallace can be reached on 571-272-6159. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application

Information Retrieval (PAIR) system. Status information for published applications may be obtained from

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at 866-217-9197 (toll-free).

JPS

VALENCIA MARTIN-WALLACE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3700